

Evans blue dye; and (3) measurement of central venous pressure. Weighing of sponges is a valuable procedure, but has certain inherent defects. The loss indicated by gravimetry is estimated to be 75 per cent of the true blood loss. The Evans dye method is used chiefly in preoperative assessment when hypovolemia is suspected, but serial estimations during surgery are feasible and can be performed in 45 minutes. Measurement of central venous pressure is the best single criterion of effective blood volume in relation to cardiac functional capacity and is the best guide to blood and fluid requirements. These method of blood loss estimation do not supersede the traditional methods of the clinical assessment of the surgical patient, but are valuable adjuncts to such assessment. (MacLeod, J.: *Estimation of Blood Loss in a Small Community Hospital*, *Canad. Med. Ass. J.* 95: 114 (July) 1966.)

HEMOPHILIA Fraction I therapy in hemophiliacs undergoing surgery was found to be of benefit. Higher *in-vitro* levels of Factor VIII were obtained than could be obtained with fresh or frozen plasma. Repeated infusions over long periods of time can be given without seriously expanding the blood volume. The initial dose is 20-30 g. in 750-1,500 ml. given over 60 minutes. An additional 10-20 g. dose is necessary 8-10 hours postoperatively and single daily infusions of 10-30 g. for at least 10 days. The chief complications are hemolysis and hepatitis. The latter is not prevented by gamma globulin although the disease may be attenuated. The cost of commercial Fraction I per average patient is \$4,250. (Marder, V. J., and others: *Major Surgery in Classic Hemophilia Using Fraction I*. *Amer. J. Med.* 41: 56 (July) 1966.)

FROZEN BLOOD Two essential features of freezing blood are the preservation of blood cells by arrest of their metabolism at -85°C . and the purification of the blood by washing. Postthaw washing, which was once considered an undesirable feature in methods for preserving blood actually removes extraneous, unnecessary and potentially injurious components

from whole blood and has positive clinical value. The resuspended frozen red blood cells can be used interchangeably with ACP blood, and in addition, are preferable to ACD blood in selected clinical situations. (Huggins, C. E.: *Frozen Blood—Clinical Experience*, *Surgery* 60: 77 (July) 1966.)

PORTABLE BLOOD REFRIGERATOR

In an attempt to solve the problems of storing blood in the operating room, the Wright-Patterson Air Force Base Hospital uses a portable blood bank refrigerator equipped with monitoring systems which holds 50 units of blood. The advantages are as follows: (1) blood is no longer transported to and from surgery at room temperature, (2) there are no freezing coils, (3) there is a continuous temperature recording device and an alarm system, (4) there is a battery operated power failure alarm system, (5) the refrigerator is equipped with a twist lock plug, (6) the portable blood bank refrigerator is located in an easily accessible area where surgeons or anesthesiologists may check all blood prior to surgery, and (7) there is less agitation of the blood. This has resulted in fewer trips and phone calls between surgery and the Blood Bank thereby reducing man hours. (Darling, C. L.: *A Portable Blood Bank Refrigerator for Temporary Storage of Blood in Surgery*, *Transfusion* 6: 273 (May) 1966.)

WARMING OF BLOOD At the last meeting of the Committee of Blood Bank Standards, the question of warming of blood was reviewed. It is the Committee's judgment that no change in the Standards is needed as warming of blood before administration is forbidden. On the other hand, warming of blood during administration by insertion of a suitable heating device is acceptable whenever there is a need, particularly during massive transfusion. This would include exchange transfusions in the newborn. It should not be warmed routinely prior to surgery. (Jennings, E. R.: *Warming of Blood, Questions and Answers Section*, *Transfusion* 6: 283 (May) 1966.)

MASSIVE TRANSFUSIONS The routine administration of calcium is recommended